

REMARKS

Applicants submit this Reply in response to the non-final Office Action mailed November 28, 2008. Claims 25-48 are currently pending, of which claims 25, 35, and 39 are independent.

In the pending Office Action, the Examiner rejected claims 25-33 and 35-48 for being unpatentable under 35 U.S.C. § 103(a). In particular, the Examiner rejected claims 25-27, 29-30, 32, and 35-48 over EP Patent Application No. EP0714218 ("*Lin*") in view of U.S. Patent App. Publication No. 2004/0176058 ("*Johnson*"), rejected claims 28 and 31 over *Lin* in view of *Johnson* and further in view of U.S. Patent No. 4,736,163 ("*Berkhout*"), and rejected claim 33 over *Lin* in view of *Johnson* and further in view of U.S. Patent App. Publication No. 2005/0210092 ("*Ferguson*").

The Examiner objected to claim 34 as being dependent upon a rejected base claim (claims 25 and 26), but indicated that claim 34 would be allowable if rewritten in independent form including all limitations of the base claims.

Applicants respectfully traverse the pending rejections and objection and request reconsideration of the present application in view of the following remarks.

Rejections Under 35 U.S.C. § 103(a) of Independent Claims 25, 35, and 39

Applicants respectfully traverse the rejection of independent claims 25, 35, and 39 under 35 U.S.C. § 103(a). The Examiner has not properly resolved the *Graham* factual inquiries required by *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), the proper resolution of which is the requirement for establishing a framework for an objective obviousness analysis. See M.P.E.P. § 2141(II), citing to *Graham*, as reiterated by the U.S. Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S.

398, 82 USPQ2d 1385 (2007). In particular, the Office Action has not properly explained the scope and content of the prior art, at least because it incorrectly interprets the content of *Lin* and *Johnson*.

Lin discloses a microcellular mobile communication system employing digital signal modulation in an optical fiber. Discussed in the Background of Applicants' specification (see Spec. at ¶¶ 0009-10), the system in *Lin* receives a radio frequency signal, converts it to baseband, and uses an analog-to-digital converter to create digital signals that are used to modulate a laser diode to transmit the received signals across an optical fiber. See *Lin* at Abstract, FIG. 1, & 2:23-56.

Johnson discloses a specialized tuner for radio frequency (RF) receivers. The tuner mixes an analog RF input signal and a digital local oscillator signal to generate an output signal at a desired intermediate frequency (IF), including "low-IF and zero-IF solutions." See *Johnson* at ¶ 0011.

Independent claims 25, 35, and 39, and dependent claims 24-34, 36-38, and 40-48, are patentably distinguishable over *Lin* and *Johnson* at least because they recite in various forms, for example, a station, network, or method for receiving first and second signals of a plurality including at least one signal adjacent to the first signal and interfering with the latter, generating from the first signal and from the at least one adjacent signal a first digital signal at a first sampling frequency, the first digital signal including a useful spectral content of the first signal and an interfering spectral content associated with the adjacent signal, and "a digital filter for processing the first digital signal, attenuating the interfering spectral content, and for providing a filtered digital

signal including at least part of said useful spectral content.” Neither of the cited references, taken alone or combined together, teaches or suggests these features.

Lin, the Examiner’s primary reference, does not even contemplate the issues addressed by the present application, such as “interfering spectral content associated with said adjacent signal” in a mobile system, as recited in the pending claims. See *also* Spec. at ¶¶ 0006, 0012. The Examiner cites to a local oscillator (LO) signal in *Lin* used in downconverter 7 as corresponding to the claimed “adjacent signal.” Office Action at 3. But that LO signal is generated by the Voltage Controlled Oscillator within the receiver (see *Lin* at FIG. 1) and, therefore, is not a signal “receive[d] from an antenna,” “associated with a second band adjacent to that of the first signal,” and including “an interfering spectral content,” as recited in the pending claims.

Moreover, while acknowledging that *Lin* does not disclose a station, network, or method using a digital filter as recited in independent claims 25, 35, or 39, the Examiner incorrectly concludes that *Lin* suggests “the signal output of analog-to-digital converter is being filter[ed] for further process[ing] (*e.g.*, *Fig. 1-3, 2:23-59, 3:1-6*).” Office Action at 4, 6, and 8 (*italics in original*).¹ Applicants cannot locate any suggestion in the cited passages or elsewhere in *Lin* that the output of its analog-to-digital converter should be further processed before being used to generate an optical signal for transmission across a waveguide. Indeed, *Lin* states that the signal “is converted to digital signal by

¹ The Office Action contains a number of statements reflecting characterizations of the claims and related art. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action. For example, while Applicants agree that *Lin* is missing elements recited in independent claims 25, 35, and 39, Applicants do not agree with the Examiner’s characterization that *Lin* discloses all other recitations of those claims.

fast analog-to-digital convertor 10 and directly modulate laser diode to form digital optical signal which is transmitted through fiber to another end (i.e. central station)." *Lin* at 2:47-50 (emphasis added). By stating to "directly" modulate the laser diode from the analog-to-digital converter, *Lin* not only does not suggest digital filtering after the analog-to-digital conversion, but also teaches away from such a modification.

Johnson does not cure *Lin*'s deficiencies. While *Johnson* discloses a digital filter in one embodiment of a radio receiver, that design is specific to *Johnson*'s specialized tuner and mixer. In that design, the tuner includes a direct digital frequency synthesizer for providing a digital local oscillator signal having a frequency chosen to mix a channel to a desired frequency. *Johnson* at FIG. 3. Nothing in *Johnson* suggests the applicability of the digital filter within its embodiment of FIG. 7C to designs other than that with its specialized tuner and mixer. Nor has the Examiner identified any predictability from this art of applying a digital filter as in *Johnson* to a system such as *Lin*'s for "attenuating the interfering spectral content, and for providing a filtered digital signal including at least part of said useful spectral content," in the manner claimed.

In addition to these reasons for patentability for independent claims 25, 35, and 39, independent claim 35 (and dependent claim 26) is further patentably distinguishable over *Lin* and *Johnson*. To establish a *prima facie* case of obviousness, "All Claim Limitations Must Be Considered." M.P.E.P. § 2143.03 (8th ed., rev. 7, July 2008). More specifically, the M.P.E.P. requires that "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." *Id.* (quoting *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970)). In this case, *Lin* and *Johnson* also fail to disclose or suggest "a sampling frequency reducer connected to said digital filter for generating a

second digital signal having a second sampling frequency lower than said first frequency,” as recited in slightly different forms in independent claim 35 and dependent claim 26.

Applicants can find no mention in *Lin* or *Johnson* of a sampling frequency reducer connected to a digital filter, particularly one configured to operate in the station and method recited in claims 35 and 26. In the Office Action, the Examiner at most cites to the low-pass filter 8 and A/D converter 10 in *Lin* as circuitry corresponding to a sampling frequency reducer for claim 35. Office Action at 6. But, among other things, that circuitry does not reduce the sampling frequency of “said first filtered digital signal” (claim 35), nor is it “connected to said digital filter” (claim 26). Accordingly, the rejections of claims 35 and 26 are additionally improper because the Examiner has not identified all the claim recitations in the cited art.

For at least the reasons discussed above, Applicants submit that independent claims 25, 35, and 39 (and dependent claim 26) are allowable over *Lin* in view of *Johnson*.

Rejections of Dependent Claims 26-33, 36-38, and 40-48

The Examiner rejected dependent claims 26, 27, 29, 30, 32, 36-38, and 40-48 for being unpatentable under 35 U.S.C. § 103(a) over *Lin* in view of *Johnson*, rejected dependent claims 28 and 31 under 35 U.S.C. § 103(a) as being unpatentable over *Lin* in view of *Johnson* and further in view of *Berkhout*, and, in addition, rejected claim 33 over *Lin* in view of *Johnson* and further in view of *Ferguson*. Notwithstanding any teachings of *Lin*, *Johnson*, *Berkhout*, or *Ferguson* relative to the subject matter recited in dependent claims 26, 27, 29, 30, 32, 36-38, and 40-48, these pending claims depend

from independent claims 25, 35, or 39 and are therefore allowable for at least the same reasons discussed above with reference to the pending 35 U.S.C. § 103(a) rejections of these independent claims.

Applicants appreciate the Examiner's indication that dependent claim 34 would be allowable if amended to remove its dependence on claims 25 and 26. However, for at least the reasons expressed above, Applicants believe that claims 25 and 26 are allowable as well and decline to amend claim 34 into independent form at this time.

Conclusion


The preceding remarks are based only on the assertions in the Office Action, and therefore do not address patentable aspects of the invention that were not addressed by the Examiner in the Office Action. The claims may include other elements that are not shown, taught, or suggested by the cited art. Accordingly, the preceding remarks in favor of patentability are advanced without prejudice to other possible bases of patentability.

In view of the foregoing remarks, Applicants respectfully request reconsideration and reexamination of the application and the timely allowance of the pending claims. Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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